ALFEROV, L.Ya., vet. vrach.

Using lumbar novocaine block in veterinary practice. Veterinariia 34 no.2:38-43 F '57. (MLRA 10:11)

1. Veterinarnaya lechebnitsa Oktyabr'skogo rayona Moskvy.
(Novocaine) (Local anesthesia) (Veterinary medicine)

ALFEROV, M. I.

PROCESSES AND PROPERTIES INDEX

10

Solubility of benzoquinhydrone in the aqueous solutions of ethyl alcohol. M. I. Alferov and A. I. [illegible]. Ukrainskii Khem. Zhur. 4, Sci. Pt. 403-4(1929).—Soly. detns. of benzoquinhydrone at 20° in aq. solns. of EtOH indicated that the soly. of the compd. increases with the increase in the concn. of alc. V. Vesselovsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ALFEROV, M.V., TUMKIN, A.D. (Moskva)

Determination of the dose of thermal neutrons by the activation method. Gig.i san. 25 no.2:49-50 F '60. (MIRA 13:6)
(NEUTRONS)
(RADIOMETRY)

ALFEROV, N.

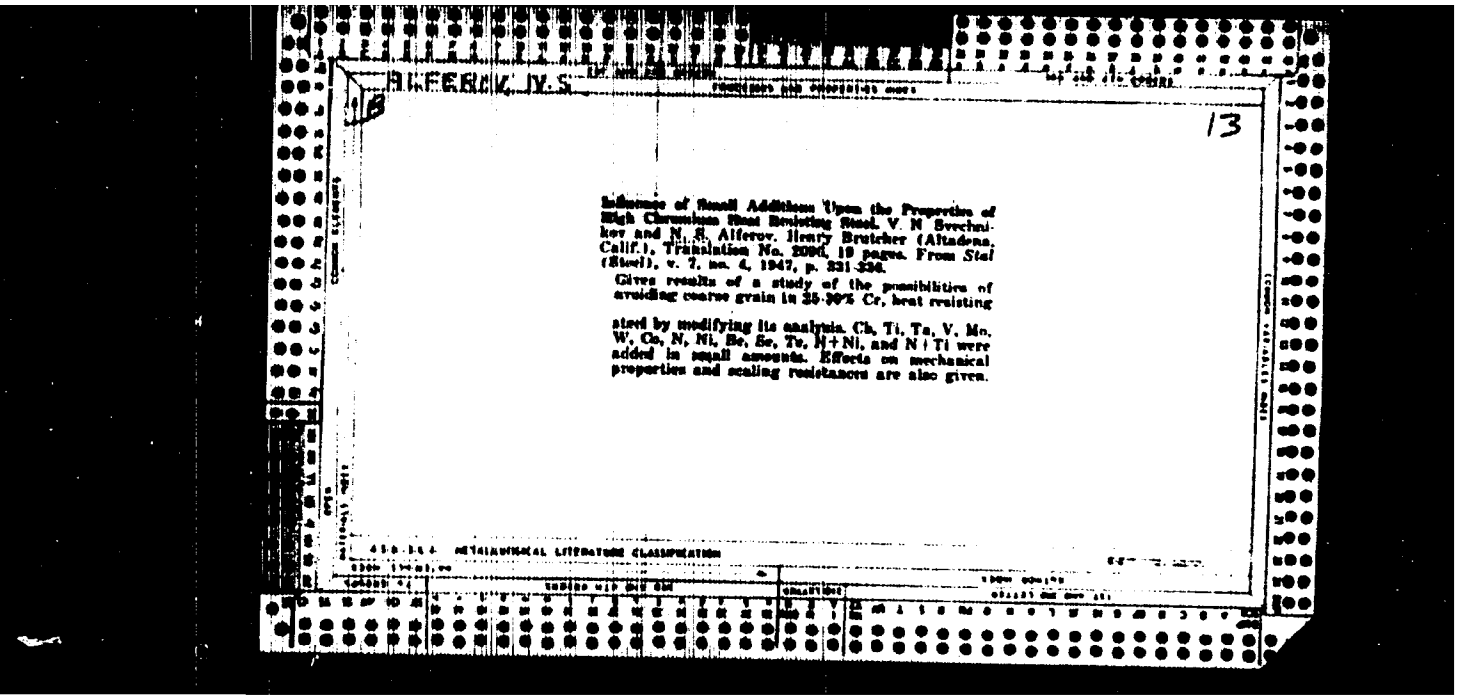
Preparing for harvesting. Posh.delo 5 no.1:14 Ja '59.
(MIRA 11:12)

1. Zamestitel' nachal'nika Otdela pozharnoy okhrany Stanislavskogo oblispolkoma.

(Stanislav Province--Harvesting--Safety measures)

ALFEROV, N.

Prerequisite of success. Pozh.delo 8 no.5:26 My '62.
(MIRA 15:5)
(Vyatoda—Chemical industries—Fires and fire prevention)



ALFEROV N.S.

137-58-5-8716

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 1. (USSR)

AUTHOR: Alferov, N.S.

TITLE: The Creative Work of Russian Architects on Plants in the Ural Region (XVIII and First Half of the XIX Century) [Tvorchestvo russkikh arkhitektorov na ural'skikh zavodakh (XVIII v. i pervaya polovina XIX v.)]

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1957, Vol 40, pp 171-198

ABSTRACT: Bibliographic entry

1. Architecture--USSR

Card 1/1

ALFEROV, N.S., kand. tekhn. nauk

Differential manometer for superhigh static pressure.
Energomashinostroenie 4 no.10:42-44 O '58. (MIRA 11:11)
(Manometer)

ALFEROV, N. S.; RYBIN, R. A.

"Experimental Heat Transfer Investigation for Annular Channels."

Paper xxxxxx presented at 2nd All-Union Conf on Heat and Mass Transfer, Minsk, 4-12 May 64.

"Polzunov" Inst, Leningrad.

ALEEROV, N. V.,

"Use of Models in the Determination of Torsional Vibrations of Ship Power Plants." (Dissertation for Degree of Candidate of Technical Sciences) Leningrad Shipbuilding Inst, Leningrad, 1955

SO: M-1036 28 Mar 56

ALPEROV, O.S.

Influence of certain geological factors on the stability of wall rock in underground workings. Izv. DGI 42:197-201 '64. (MIRA 18:11)

ALFEROV, O.S.

Evaluating the effect of tectonics on the degree of metamorphism of the sedimentary rocks in the Donets Basin. Geol. zhur. 24 no.2:42-48 '64 (MIRA 18:2)

1. Dnepropetrovskiy gornyy institut.

Alfarov, P. T.

ALFEROV, P.T.

Some words to parents. Politekh. obuch. no.1:80-81 Ja '58.
(MIRA 10:12)

1. Srednyaya shkola No.2, Orenburg.
(Technical education) (Home and school)

ALFEROV, S.A.
Min Higher Education USSR. Moscow Inst of the Mechanization and Electrification of Agriculture imeni V.M. Molotov.

ALFEROV, S.A.: "Investigation of the process of pressing straw." Min Higher Education USSR. Moscow Inst of the Mechanization and Electrification of Agriculture imeni V.M. Molotov. Moscow, 1956.
(Dissertation for the Degree of Candidate in Technical Sciences.)

SO: Knizhnaya Letopis', No.20, 1956

ALFEROV, S.A., kandidat tekhnicheskikh nauk.

Resistance from the hay channel and bale guides in balers. Sel'khozmashina no.4:15-19 Ap '57. (MIRA 10:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Agricultural machinery)

ALFEROV, S.A., kandidat tekhnicheskikh nauk.

Fenthol involved in compressing straw. Sel'khozmashina no.3:6-10 Mr '57. (MLRA 10:5)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.

(Straw)

AUTHOR: Alferov, S.A. 115-5-14/44

TITLE: A Rubber Pressure-Indicator (Rezinovyy datchik davleniya)

PERIODICAL: "Izmeritel'naya Tekhnika", No 5, Sep-Oct 1957, p 28 (USSR)

ABSTRACT: Detailed description is given of a small, simple rubber pressure-indicator - developed at the All-Union Institute for Agricultural Machinebuilding - for investigating the pressure within soil layers when working with ploughs and cultivators, as well as the pressure within a silo or straw-like materials inside a press channel. The device consists of a conventional wire resistance indicator glued-in between round rubber sheets covered with metal plates to prevent bending of the rubber disks. It is said to be highly sensitive, and the measurement errors do not exceed 4%. A series of such pressure-indicators stayed fully serviceable for one year.
The article contains 1 drawing.

AVAILABLE: Library of Congress

Card 1/1

ALFEROV, S. A. (Cand. of Tech. Sci.)

"The Design of Foreign Cereal Harvesting Combines."

ALL-Union Conference on Problems of Designing and Products agricultural Machines (Vsesoyuznaya konferentsiya po voprosam ~~konferentsiya po voprosam~~ konstruirovaniya i proizvodstva sel'skokhozyaystvennykh mashin. Rostov-on-Don, January 1958

Mashinostroitel', 1958, Nr 8, p 46, (USSR).

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S/535/61/000/139/003/009
E140/E435

AUTHOR: Alferov, S.M., Candidate of Technical Sciences

TITLE: Oscillation of a neutral aircraft with auto-pilot containing a sampled-data servomechanism

SOURCE. Moscow. Aviatsionnyy institut. Trudy. no.139. 1961. Voprosy avtomaticheskogo regulirovaniya dvizhushchikhsya ob"yektov. 71-86

TEXT: The article considers a system including a sampled-data servomechanism according to the block diagram of Fig.1, where 1 - a lag element with time constant T, corresponding to the input winding of a magnetic amplifier; 2 - a linear element with insensitive zone Δ and unity gain factor; 3 - the pulse element, generating a pulse-duration-modulated signal; 4 - the transmission between the drive and the radar, with delay τ and angular velocity $\omega = f$; 5 - an integrator (the rudder with feedback potentiometer). Such servomechanisms are used in a number of auto-pilots in which the signal summation unit is a magnetic amplifier, and the transmission between the continuously rotating drive and the rudder is realized by pulse excitation of electro-magnetic clutches. Outside the dead zone the equations of the

Card 1/5

sampling element can be described by the equations

$$\dot{\delta} = -f \operatorname{sign} \delta[n]; \quad Tn \leqslant t \leqslant nT + \varepsilon,$$
$$\ddot{\delta} = 0; \quad Tn + \varepsilon \leqslant t \leqslant (n+1)T;$$
$$\varepsilon = K_1 \delta[n] \operatorname{sign} \delta[n]$$

where K_1 is the ratio of pulse duration to the magnitude of input signal at the start of the pulse, T is the repetition period, n is the number of previous pulses and ε is the pulse duration. The first problem in considering the stability of the aircraft with an auto-pilot containing such an element is the stability of motion of the sampled-data servomechanism itself outside the dead zone. This question is beyond the scope of the article, it being simply assumed that the stability conditions of the servomechanism as well as those of the aircraft with auto-pilot containing such a servomechanism are satisfied outside of the dead zone. From these conditions it appears that if in such a system self-oscillations arise, this will occur at the first pulse, which has minimum duration. The equations of the system are

solved by a piecewise analytic approach. The system equations are found by means of the Laplace transform for each individually definable time interval. A necessary condition for the existence of self-oscillation in the isolated sampled-data servomechanism is found in the form

$$\frac{ft_i}{2} \gg \varepsilon \qquad (9)$$

where t_i is the duration of the minimum pulse. (This inequality was obtained empirically by N.N.Yefimov.) The half-period of the oscillation will be equal to

$$t_i + \tau + t_1$$

where t_1 is defined by the formula $\sigma(t_1) = -\varepsilon$, τ is the delay. Since Eq.(9) for the appearance of self-oscillations in an isolated servomechanism is independent of the amplifier time constant T and the system delay τ, the author investigates the oscillatory regime of a neutral aircraft with

Oscillation of a neutral aircraft ...

ideal pulse servomechanism, i.e. one in which $T = \tau = 0$. The auto-pilot under consideration stabilizes the aircraft for angle, rate of turn and angular acceleration. In addition to the elements of the block diagram in Fig.1, it is necessary to add one block for the aircraft transfer function and to indicate the aerodynamic feedback from the rudder to the aircraft. Conditions are again found for the self-oscillation of the system, which under certain simplifying assumptions lead to an expression for the half-period of oscillation in the form

$$t_1 = t_i + \frac{e^{-\frac{k_{-1} f t_i}{2}}}{c_1 k \frac{f t_i}{4}} \qquad (17)$$

where the numerator of the fraction in the right-hand side is the previously given condition for oscillation of the isolated servomechanism. From this expression it follows that if the isolated servomechanism is sufficiently far from the boundary of instability, the introduction of second derivative of the angle

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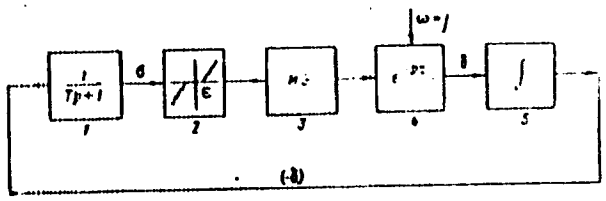
Oscillation of a neutral aircraft ...

of deviation reduces the period and amplitude of self-oscillation of the aircraft, as is also known experimentally. The author then considers the case where the isolated servomechanism is in a self-oscillatory regime. It is shown that these oscillations will be duplicated with the same period in the aircraft auto-pilot system. It is shown that these conclusions remain valid in the presence of delay and lag in the servomechanism, as was assumed from the form of Eq.(9). Specific examples are worked and the phase trajectories of self-oscillation of an aircraft are plotted. There are 4 figures, 1 table and 3 Soviet-bloc references.

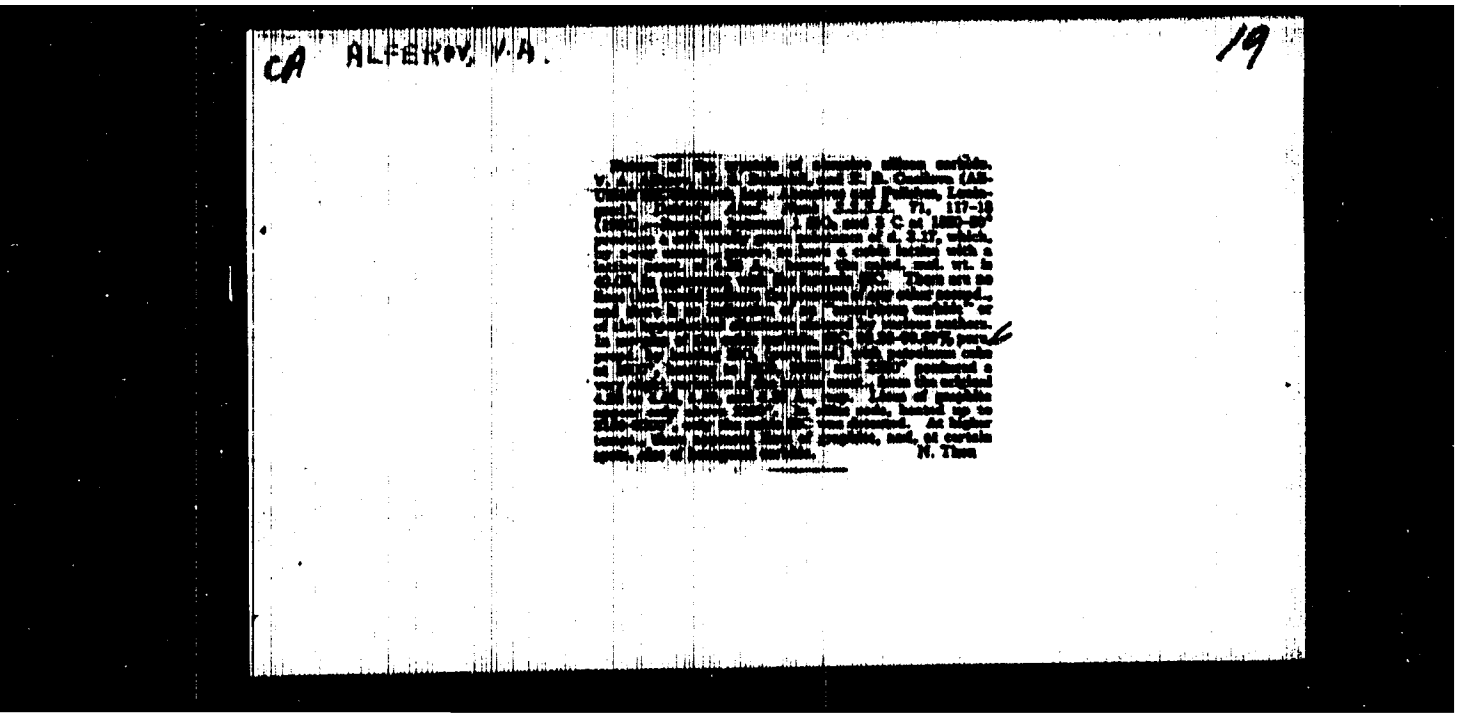


Card 5/5

Fig.1.

ALTHRIN, S.T.

Methods and results of petroleum prospecting in the countries of the Near East. Trudy VNIGNI no.42:114-132 '64.
(MIRA 18:3)



ALFEROV, V.A.

USSR / Morphology of Crystals. Crystallization. B-7

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9385

Author : Filonenko, N.Ye., Alferov, V.A.
Title : Influence of Impurities on the Crystallization of Silicon Carbide.

Orig Pub : Abrazeviy, 1955, No 13, 3-20

Abstract : An investigation was made of the influence of impurities of Fe_2O_3 and Ca. The initial materials were quartz sand and petroleum coke. Heat treatment was carried at 1650 -- 2200° with soaking for 5 -- 6 hours. The specimens obtained were subjected to microscopic and chemical analysis. The following was established: (1) Impurities in the charge have favorable or adverse effects essentially not at high temperatures ($\geq 2000^{\circ}$) at the end of the process of the carbide formation, and at temperatures below 1800° their effect is felt at the beginning of the process. (2) Impurities that do not form compounds with silica (for example iron) are not harm-

Card : 1/2

USSR / Morphology of Crystals. Crystallization. E-7

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9385

Abstract : ful and may serve as catalysts. (3) Impurities that interact with SiO_2 upon production of SiC(CaO) effect adversely the formation of SiC, the most harmful impurities being Al_2O_3 and CaO; if they are jointly present, there is formed in the SiO_2 a eutectic with a melting temperature of 1170°. (4) Al_2O_3 amounting to 3% prevents carbide formation; a eutectic is formed with a melting temperature of 1595°; at a temperature above 1750° there is formed Al_4S_3 and SiC of the third modification (more valuable for electro-technical purposes than for abrasives). (5) The presence of free CaO in the charge reduces the yield of SiC (at 1.5% CaO in the charge, the silicon content is reduced by 17%, and at 3% CaO it is reduced by 45%).

Card : 2/2

1. ALFEROV, V.A.
2. USSR (600)
4. Lilies
7. Seed propagation of lilies. Biul.Glav.bot sada no.12 1952

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

ALFEROV, V.A.

Seed propagation of amaryllis (Hippeastrum). Biul.Glav.bot.sada no.16: 85-87 '53. (MLRA 7:4)

1.Sovkhoz "Yuzhnyye kul'tury". (Amaryllis)

ALFEROV, Vasiliy Alekseyevich; SINITSYNA, N.S., redaktor; ZUBRILINA, Z.P., tekhnicheskiy redaktor

[Bulbous flowers; hyacinths, tulips, lilies, narcissuses, amaryllises hippeastrums and tuberoses] Lukovichnye tsvetochnye rasteniia; giatsinty, tiul'pany, lilii, nartsissy, amarillisy, gippeastrumy, tuberozy. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 91 p. (MLRA 9:9)

1. Agronom sovkhoza "Yuzhnye kul'tury" (for Alferov)
(Bulbs)

ALFEROV, V.A.

History of the organization of specialized nurseries for flowering bulbs in the Caucasus. Trudy Bot.inst.Ser.6 no.7: 438-439 '59. (MIRA 13:4)

1. Sovkhoz "Yushnyye kul'tury," Adler.
(Caucasus--Floriculture)

STROGANOVA, T.P.; LUKASH, A.F.; ALFEROV, V.A.; VARGANOVA, A.N., red. izd-va; NAZAROVA, A.S., tekhn. red.

[Catalog of flowering plants and lawn grasses grown in nurseries of the State Trust of Landscaping and Tree Planting] Katalog tsvetochnykh rastenii i gazonnykh trav, vyrashchivaemykh pitomnikami tresta "Goszelenkhoz." Moskva, Izd-vo M-va kommun. khoz. RSFSR, 1961. 93 p. (MIRA 14:10)

1. Gosudarstvennyy respublikanskiy trest zelenogo khozyaystva "Goszelenkhoz."

(Plants, Ornamental—Catalogs)

L 38865-65

ACC NR: AR5015905 (A) SOURCE CODE: UR/0081/65/000/022/B018/B018

AUTHOR: Alferov, Zh. I.; Galavanov, V. V.; Zinogorova, N. S.; Kazarinov, R. F.

TITLE: Recombination radiation from the p-n-n+ structure in indium antimonide

SOURCE: Ref. zh. Khimiya, Abs. 22B91

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 503-507

TOPIC TAGS: indium antimonide, recombination radiation, semiconductor carrier

ABSTRACT: The spectral distribution of recombination radiation from the p-n-n+ structure in indium antimonide was studied. The p-n-n+ structures were obtained by fusing indium and tin into n-type indium antimonide of high purity. The dependence of the intensity and spectral distribution of the recombination radiation on the concentration of the injected carriers was investigated. Authors' abstract. [Translation of abstract].

SUB CODE: 20

Card 1/1

ACC NR: AP7005136 SOURCE CODE: UR/0181/66/008/012/3513/3522

AUTHOR: Alferov, Zh. I.; Korol'kov, V. I.; Trukan, M. K.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Electric properties of GaP-GaAs p-n heterojunctions

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3513-3522

TOPIC TAGS: pn junction, volt ampere characteristic, electric capacitance, epitaxial growing, semiconductor band structure

ABSTRACT: The paper deals with the electric properties of GaP-GaAs heterojunctions, such as the volt-ampere characteristic, the capacitance-voltage characteristic, and the temperature and frequency dependences. It also deals with the interpretation of the current flow mechanism and of the fundamental parameters of the band model of the investigated heterojunctions on the basis of the experimental data. The junction were produced by epitaxial growing of GaP by the gas-transport method on single-crystal substrates of n-type GaAs oriented in the (111) plane. The GaAs was doped with tellurium. The single-crystal GaP films were doped during the growing with cadmium. The film thickness was 10 - 30 μ. The electric properties of the produced heterojunctions were measured fro a large number of samples with different degrees of doping of both the substrates and the layers. The procedure for obtaining the epitaxial films and their electric properties were described earlier (FTT v. 7, 2370, 1965 and elsewhere).

Card 1/2

ACC NR: AP7005836

The volt-ampere and voltage-capacitance characteristics were investigated in a temperature range 77 - 400K. The dependence of the capacitance on the voltage offers evidence of the presence of a layer of increased impurity concentration inside the space-charge region. The causes of this layer are discussed. The results are interpreted within the framework of the band model proposed by R. Anderson (Sol. St. Electronics v. 5, 341, 1962) with allowance for the presence of this layer with increased concentration of deep donor centers. The gaps in the conduction and electron bands calculated on the basis of this model agree well with the experimentally determined quantities. The authors thank V. M. Tuchkevich and D. N. Nasledov for continuous interest in the work, D. Z. Garbuzov, A. A. Lebedev, Ye. L. Portnoy, and B. V. Tsarenkov for useful discussions, and Ye. A. Gamilko, A. N. Yermakov, and A. A. Yakovenko for help with preparing the samples and the measurements. Orig. art. has: 7 figures, 11 formulas, and 2 tables.

SUB CODE: 20, 09/ SUBM DATE: 15Apr66/ ORIG REF: 006/ OTH REF: 013

Card 2/2

ACC NR: AP7005358 SOURCE CODE: UR/0181/67/009/001/0279/0282

AUTHOR: Alferov, Zh. I.; Garbuzov, D. Z.; Grigor'yeva, V. S.; Zhilyayev, Yu. V.; Kradinova, L. V.; Korol'kov, V. I.; Morozov, Ye. P.; Nimua, O. A.; Portnoy, Ye. L.; Prochukhan, V. D.; Trukan, M. K.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Injection luminescence of epitaxial heterojunctions in the GaP-GaAs system

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 279-282

TOPIC TAGS: epitaxial growing, junction diode, gallium arsenide, gallium phosphide, photoluminescence, luminescence spectrum, PN JUNCTION

ABSTRACT: The authors use the results of an earlier investigation (FTT v. 8, 3236, 1966) of the effect of heat treatment on the photoluminescence of gallium arsenide to study the luminescence and photoluminescence spectra of n-$GaAs_{0.85}P_{0.15}$ - p-GaAs and n-GaP - p-GaAs epitaxial heterojunctions grown on substrates of gallium arsenide doped with cadmium. The measurements were made at 77K. The absolute emission intensity in the epitaxial junctions was not less than that from diodes obtained by diffusion of Zn in GaAs. The absolute intensity of the edge emission in the n-GaP - p-GaAs junctions was approximately one order of magnitude lower than in good GaAs diffusion diodes at the same currents, but there was no decrease in the case of the n-$GaAs_{0.85}P_{0.15}$ - p-GaAs junctions. This indicates that epitaxial junctions of the

Card 1/2

ACC NR: AP7005358

GaP - GaAs system can be so constructed as to afford highly effective unilateral injection and can thus be used for effective emitters. Triple structures n-$GaAs_{0.85}P_{0.15}$ - p-GaAs - p^+-$GaAs_{0.85}P_{0.15}$ exhibited radiation at much higher current densities than for diffusion GaAs diodes, and a sharp increase in the intensity and a narrowing down of the spectral band of the edge emission was observed with further increase of the current through the structure, probably as a result of population inversion resulting from the injection of electrons and holes from the broad-band emitters and a transition to the stimulated emission mode. No such phenomena were observed in double structures. The authors thank V. M. Tuchkevich for continuous interest, Ye. A. Gamilko, A. N. Yermakova, T. A. Potiforova, T. N. Levitskaya, T. Mcheidze, and G. I. Mirianashvili for help with the preparation of the samples and with the measurements. Orig. art. has: 3 figures. [02]

SUB CODE: 20/ SUBM DATE: 15Jul66/ ORIG REF: 004/ OTH REF: 001
ATD PRESS: 5116

Card 2/2

LEYTSIS, P.; ALFEROVA, A.I., agronom po zashchite rasteniy (Maloyaroslavetskiy rayon, Kaluzhskoy obl.)

Following up our articles. Zashch. rast. ot vred. i bol. 6 no.12: 19 D '61. (MIRA 16:5)

1. Direktor Leningradskoy stantsii po raku kartofelya (for Leytsis).

ALFEROVA, A. I., agronom po zashchite rasteniy

The Maloyaroslavets unit. Zashch. rast. ot vred. i bol. 5 no.5:13-14 My '60. (MIRA 16:1)

(Maloyaroslavets District—Plants, Protection of)

LIPOVOY, I.P.; ALFEREVA, A.M.

Advanced equipment for electroplating. Mashinostroitel' no.9:33 S '65. (MIRA 18:12)

ALFEROVA, A.V.

PHASE I BOOK EXPLOITATION 362

[illegible] S.S.R. Statisticheskoye upravleniye

[illegible] khozyaystvo Turkmenskoy SSR; statisticheskiy sbornik (National Economy of the Turkmen S.S.R.; Statistical Tables) [illegible]abad, Gosstatizdat, 1957. 171 p. 5,000 copies printed.

[illegible] Ed.: Charyyev, A.; Tech. Ed.: Strel'tsov, E. M.

PURPOSE: This book contains a series of statistical tables, and it is intended to provide statistical data on the growth of the national economy of the Turkmen S.S.R.

COVERAGE: The tables which are included in this book give basic indexes on the development of the national economy of the Turkmen S.S.R. for various years during the period between 1913 and 1956, using 1913, 1928 and 1940 as a basis of comparison.

Card 1/26

National Economy (cont.)

Some of the data are tabulated by oblast. Data for 1956 are not yet complete. A few indexes indicate industrial targets for 1960 as directed by the 20th Congress of the CPSU. Data on some branches of the national economy are not included because the Statistical Department of the Turkmen S.S.R. intends to issue separate reports with more detailed information on these branches of the national economy. The following personalities took part in the preparation of various sections of this book, agriculture: Lyko, B.A. (deceased), Ivantsov, V.I., Grigor'yeva, S.I., and Bel'fer, A.Ye.; industry, transport and communications: Yurkova, N.Ye.; Kuznetsov, N.D., and Man'shina, K.V.; capital construction: Donskova, N.I.; employment: Timofeyev, B.G., Pankilov, V.V.; commodity trade: Mel'kumova, A.I., Alferova, A.V.; culture, population, and public health: Roslyakov, A.A., Allanazarov, P., Gabanova, Kh.A.; editor of this volume: Charyyev, A.; General Editor: Safarmamedov, A.

Card [illegible]/26

MAN'KIN, E.A., kand.tekhn.nauk; MOROZOV, D.N., kand.tekhn.nauk; ALFEROVA, A.V., inzh.

Distribution of leakage flux and additional losses in the cores of large transformers under load conditions. Elektrichestvo no.9:68-70 S '64. (MIRA 18:10)

1. Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina.

MAN'KIN, E.A., kand.tekhn.nauk; MOROZOV, O.N., kand.tekhn.nauk; ALFEROVA, A.V., inzh.

Additional eddy current losses in transformer windings. Elektrotekhnika 36 no.10:16-19 O '65. (MIRA 18:10)

ALFEROVA, E.N.

Determining the thresholds of visual recognition in children. Vop.psikhol. no.6:77-[illegible] N-D '62. (MIRA 16:2)

1. Kafedra psikhologii pedagogicheskogo instituta imeni V.I. Lenina, Moskva.
(Sight) (Child study)

ALFEROVA, O., starshiy inzh.-tekhnolog

Consumers' cooperatives for the inhabitants of the Virgin Territory. Obshchestv. pit. no.8:20 Ag '61. (MIRA 14:10)

1. Tselinnyy kraypitrebsoyuz.
(Virgin Territory--Cooperative societies)

ALFEROVA, G.V.

37651
S/080/62/035/005/014/015
D247/D307

AUTHORS: Usov, Yu. N., Skvortsova, Ye. V., Vyshemirskiy, V. S., Alferova, G. V., Klyushnikova, G. G. and Smirnova, N. S.

TITLE: Polymerization of the butane-butene fraction of cracking gases on a phosphoric acid film catalyst

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 5, 1962, 1148-1150

TEXT: Various carriers for films of phosphoric acid, based on natural silica, were investigated. The film catalysts were prepared directly on the base of ground quartz of sands treated with HF. The reaction was carried out under constant flow conditions. An increase in pressure from atmospheric to 40 - 50 atm was found to result in lower efficiency of the polymerization process. A series of coarse-grained sands were also prepared as carriers to investigate the effects of impurities and of specific grain surfaces. Results, expressed as the yield of diisobutylene polymer as a per-

Card 1/2

2

S/080/62/035/005/014/015
D247/D307

Polymerization of the ...

centage of the butenes present and as grams per liter of the carrier per hour, are given for a series of carriers for the film catalyst and for various times for the reaction. Optimum conditions for the process were found to be (at atmospheric pressure): a temperature of 175 - 185°C, an input rate of 75 hour^{-1} for the reactants and a periodical addition of fresh phosphoric acid for the catalyst at the rate of 0.5 - 0.7% of the original quantity per hour. After working for 50 hours under these conditions, the activity and yields using films on quartz became comparable with those obtained with the industrial catalyst (phosphoric acid on kieselghur). Sand- or quartz-based catalysts were easier to regenerate by aqueous washing and air or steam and air blowing than the industrial catalyst. Acid-resistant steel used as a reactor vessel did not effect the reaction. There are 2 figures.

ASSOCIATION: Saratovskiy gosudarstvennyy universitet imeni N. G. Chernyshevskogo (Saratov State University imeni N. G. Chernyshevskiy)

SUBMITTED: April 10, 1961

Card 2/2

USOV, Yu.N.; SEVORTSOVA, Ye.V.; YELOVATSKAYA, L.A.; VAYSTUB, T.G.; ALFEROVA, G.V.

Pyrolysis of Stepnovskiy gas condensate. Izv. vys. ucheb. zav.; neft' i gaz 7 no.11:45-49 '64. (MIRA 18:11)

1. Saratovskiy gosudarstvennyy universitet im. N.G. Chernyshevskogo.

USOV, Yu.N.; SKVORTSOVA, Ye.V.; ALFEROVA, G.V.; YAKOVATSKAYA, L.A.

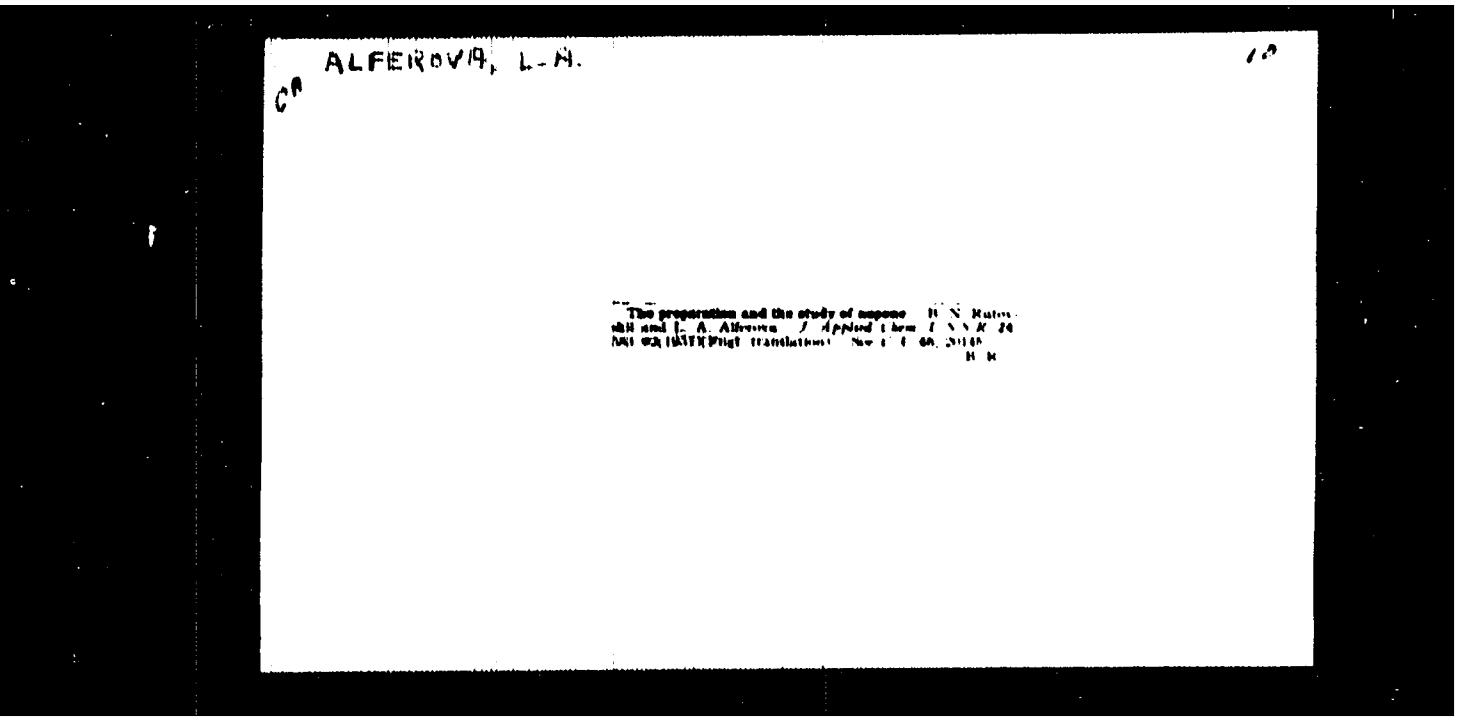
Catalytic reforming of Stepnovskiy gas-condensate fractions.
Izv. vys. ucheb. zav.; neft' i gaz 7 no.5:59-63 '64. (MIRA 17:9)

1. Saratovskiy gosudarstvennyy universitet im. N.G. Chernyshevskogo.

*ALFEROVA, L.A. CAND TECH SCI

Dissertation: "Obtaining 6.6-Dimethyl-2-Vinyl-Bicyclo-(1,1.3)-Heptene-(2) and its Polymerization."

25 Nov 49
Moscow Order of Lenin Chemicotechnological Inst imeni D.I. Mendeleyev.



ALFEROVA, L. A.

Polymerization of nonene. B. N. Butovskii and L. A. Alferova, Zhur, Priklad. Khim. (J. Applied Chem.) 24, 678-9(1951.)—Nopene can be polymerized to high-mol, polymers, tiving by thermal method (100°) products with mol. wt. about 9500 in air, 12,000 in N atm, and about 8000 when polymerized with 0.1% B_2O_2. The reaction is a typical chain reaction. The product is similar to polystyrenes but the softening point is somewhat higher (170-80°). G. M. Kosolapoff

CA ALFEROVA, L. A.

10

Preparation of nopol and its derivatives. B. N. Rutovskii and L. A. Alferova. *Zhur. Priklad. Khim.* (J. Applied Chem.) 24, [illegible] (1951).—β-Pinene, isolated from turpentine by fractionation, and contg. 2.5% α-pinene, was used in the condensation with CH_2O (paraformaldehyde). For the best results a temp. of 180-200° is maintained for 6 hrs. with 2 molar excess of paraformaldehyde over pinene. Under these conditions camphene, dipentene, and α-pinene shown do not react with CH_2O. Repeated fractionation of the crude product (yield 47.5%), gave the pure nopol, 6,6-dimethylbicyclo[3.1.1]-2-heptene-2-ethanol, b_{10} 110.5°, d_4^{20} 0.9681, n_D^{20} 1.4930. This, shaken with cold concd. HCl gave 1,8-dichloro-7-p-menthanemethanol [?], m. 74-5° (from petr. ether). The alc. refluxed with NaOAc and Ac_2O 1 hr. gave nopyl acetate, $C_{11}H_{17}OAc$, b_{10} 118°, d_4^{20} 0.9772, n_D^{20} 1.4700, $[\alpha]_D^{20}$ −21.33°. Heating the alc. 2 hrs. with o-$C_6H_4(CO)_2O$ in C_6H_6 gave the acid phthalate, which after distn. in vacuo (b.p. not given), had n_D^{20} 1.4919, d_4^{20} 0.9574, $[\alpha]_D^{20}$ −26.74°.

G. M. Kosolapoff

ALFEROVA, L.A.; KORYAKIN, V.I.

Intensifying the operation of wood drying kilns. Gidroliz. i lesokhim. prom. 9 no.7:9-12 '56. (MIRA 12:3)

1.TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.
(Wood--Drying)

ALFEROVA, L.A., kand.tekhn.nauk; SUMAROKOV, V.P., kand.tekhn.nauk; EL'KIN, D.I., kand.ekon.nauk

Recovery of low-molecular acids C_1-C_4 from the wastes of synthetic fatty acid manufacture. Masl.shir.prom. 25 no.1:28-31 '59. (MIRA 12:1)

1. Tsentral'nyy nauchno-issledovatel'skiy lesotekhnicheskiy institut.

(Acids)

ALFEROVA, L.A.; KATUNINA, V.I.

Technology of the processing of wood powder. Sbor.trud. TSNILKHI no.13:39-45 '59. (MIRA 13:10)
(Wood--Chemistry)

TISHCHENKO, D.V.; ALFEROVA, L.A.; RYKACHEV, P.I.

New antiseptic based on wood-tar phenols. Sbor.trud. TSNILKHI no.13:60-66 '59. (MIRA 13:10)
(Antiseptics) (Phenols)

ALFEROVA, L.A.; KATUNINA, V.I.

Preparation of acids from wood powder. Gidroliz.i lesokhim. prom. 13 no.4:9-10 '60. (MIRA 13:7)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.
(Wood--Chemistry) (Acetic acid) (Acids, Organic)

ALFEROVA, L.A.; KATUNINA, V.I.

Technology of the processing of gray calcium acetate. Sbor. trud.TSNILKHI no.14:17-25 '61. (MIRA 16:4)
(Calcium acetate) (Wood distillation)

ALFEROVA, L.A., kand.tekhn.nauk; CHISTOV, I.F.

Purification of acid waters in the production of synthetic fatty acids. Masl.-zhir. prom. 27 no.6:19-24 Je '61. (MIRA 14:6)

1. Tsentral'nyy nauchno-issledovatel'skiy lesotekhnicheskiy institut.
(Acids, Fatty)
(Sewage--Purification)

LUR'YE, Yu.Yu.; ALFEROVA, L.A.; TITOVA, G.A.

Analysis of waste waters of the sulfate pulp industry. Zav.lab. 29 no.4:412-415 '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii.

(Woodpulp) (Sewage—Analysis)

ALFEROVA, L.A., kand.tekhn.nauk; BONDAREVA, T.N.; SHERSTNEVA, V.A., inzh.; IVANSKAYA, L.N., inzh.; GUSHCHINA, L.I.

Amount of acid waters formed in the manufacture of fatty acids. Masl.-zhir.prom. 29 no.11:40-43 N '63. (MIRA 16:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrologii Akademii stroitel'stva i arkhitektury SSSR (for Alferova, Bondareva). 2. Volgodonskoy filial Vsesoyuznogo nauchno-issledovatel'skogo i proyektnogo instituta sinteticheskikh zhirozameniteley (for Sherstneva, Ivanskaya, Gushchina).

ALFEROVA, L.A.; PANOVA, V.A.; TITOVA, G.A.

Deodorization of the waste waters from sulfate pulp factories.
Bum. prom. [38] no.6:5-8 Je '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii.
(Deodorization) (Industrial wastes)

LUR'YE, Yu.Yu.; ALFEROVA, L.A.; RONDAREVA, T.N.

Separate determination of low-molecular fatty acids in waste waters. Zav. lab. 30 no.7:799-801 '64. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii.

ALFEROVA, L.K.

Effect of animal and vegetable fats on blood coagulability in hypertension. Terap. arkh. 34 no.12:20-26 D'62. (MIRA 16:6)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. A.G. Gabrichevskiy) sanitarno-gigiyenicheskogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta.
(FAT) (BLOOD--COAGULATION) (HYPERTENSION)

ALFEROVA, L. V.

AUTHORS: Sinayskiy, G. M., Ratner, T. V., Makarova, V. P., Gorin, Yu. A., Ivanov, V. S., Alferova, L. V. 79-11-4/56

TITLE: An Investigation of the Composition of the Hydrocarbons C_6 - the By-Products of the Catalytic Synthesis of Divinyl From Alcohol (Izucheniye sostava uglevodorodov C_6 - pobochnykh produktov kataliticheskogo sinteza divinila iz spirta).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 2927-2931 (USSR).

ABSTRACT: The investigation of ethyl alcohol in divinyl over a catalyst represents a complicated catalytic process which is accompanied by a considerable amount of side reactions. In spite of the informative papers by S. V. Lebedev and Ya. A. Gorin in the field of the catalytic formation of the combined dienes (C_nH_{2n-2}) from alcohols, their binary mixtures, and the mixtures of the alcohols with aldehydes and ketones with regard to the by-products, their composition is by far not sufficiently investigated. Of the insufficiently investigated by-products obtained on rectification of hydrocarbons the so-called hexylene-hexadiene fraction (boiling point 60-90°C) is the object of the authors' investigation. On further rectification the following were obtained beside other by-products. 1) hexadiene-1,3. 2) 3-

Card 1/2

An Investigation of the Composition of the Hydrocarbons C_6 - the By-Products of the Catalytic Synthesis of Divinyl From Alcohol. 79-11-4/56

methylpentadiene 1,3. 3) cyclohexadiene-1,3. Thus the presence of the combined dienes. 1) hexadiene-1,3. 2) 3-methylpentadiene-1,3 and 3) cyclohexadiene-1,3 was determined in the hexylene-hexadiene fraction of the hydrocarbons, the by-products of the catalytic synthesis of divinyl from alcohol according to Lebedev, and the way of their formation was partially suggested.
There are 19 references, 9 of which are Slavic.

ASSOCIATION: The Laboratory of the Factory SK and the Leningrad State University (Laboratoriya zavoda SK i Leningradskiy gosudarstvennyy universitet).

SUBMITTED: November 23, 1956.

AVAILABLE: Library of Congress.

1. Divinyl-Synthesis 2. Diene syntheses 3. Ethanol-Catalysis 4. Hydrocarbons-Analysis

Card 2/2

ALFEROVA, L.V.; DOLGOPLOSK, B.A.; KROPACHEV, V.A.

Mechanism of the decomposition of aliphatic - aromatic triazenes under the influence of acids and water. Vysokom.soed. 2 no.1:3-12 Ja '60. (MIRA 13:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Triazene)

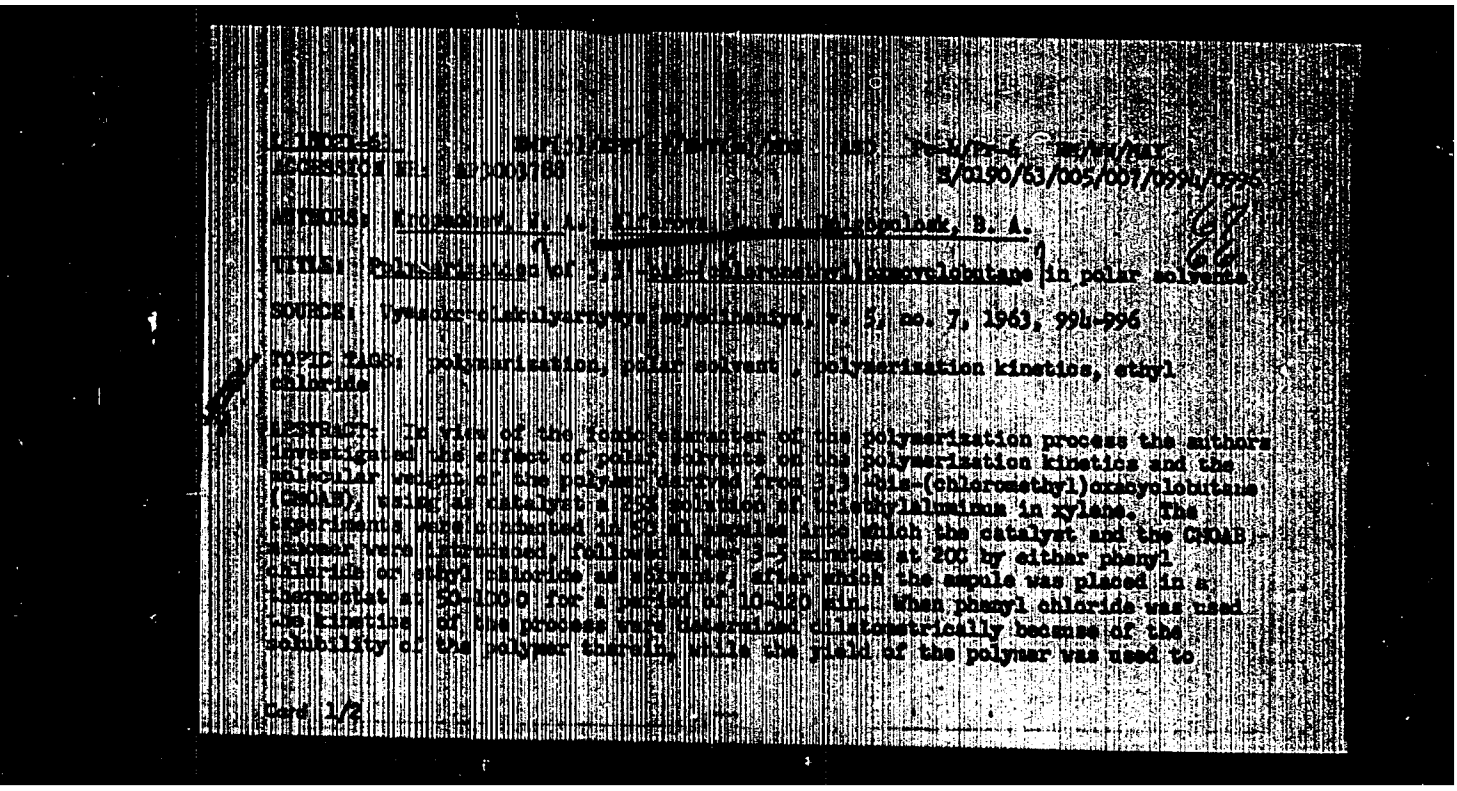
ALFEROVA, L.V.; DOLGOPLOSK, B.A.; KROPACHEV, V.A.

Decomposition of diazoaminobenzene in hydrocarbon media under the influence of organic acids, and use of the reaction in initiating polymerization. Vysokom.soed. 2 no.1:67-74 Ja '60. (MIRA 13:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Benzene) (Acids, Organic) (Polymerization)

ALFEROVA, L. V.

Cand Chem Sci - (diss) "Study of the method of decomposition of fatty aromatic and aromatic triazenes under the influence of water and acids." Leningrad, 1961. 17 pp; (Leningrad Order of Lenin State Univ imeni A. A. Zhdanov); 180 copies; price not given; (KL, 7-61 sup, 221)



L 18021-63
ACCESSION NR: AP3003786

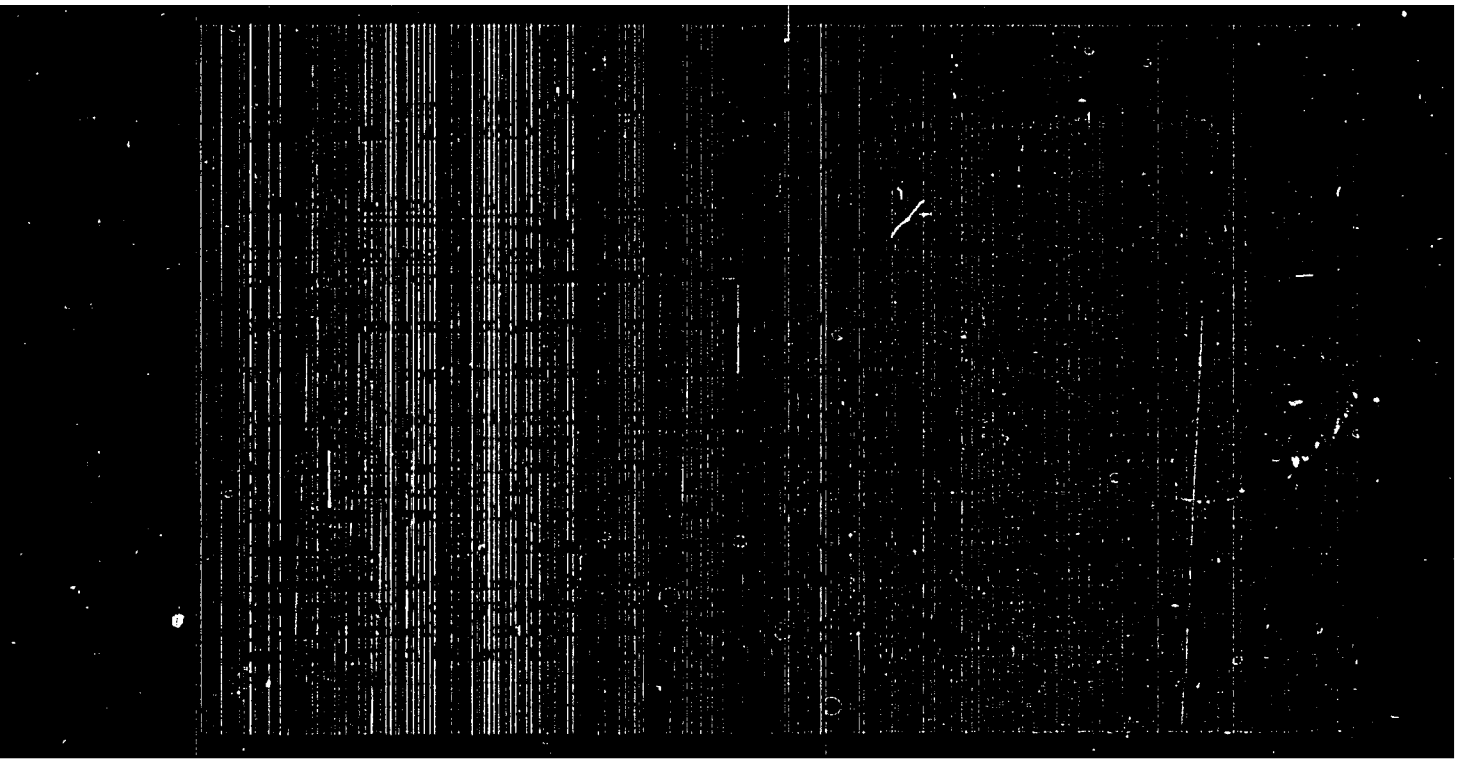
[illegible] It was found that in the ethyl [illegible] directly on the amount of the [illegible] of triethylaluminum, while [illegible] concentrations of the [illegible] polymerization rate was much [illegible] with the catalyst for 3-5 min [illegible] chloride was found unsatis- [illegible] Ethyl chloride proved [illegible] rate and the viscosity of [illegible]

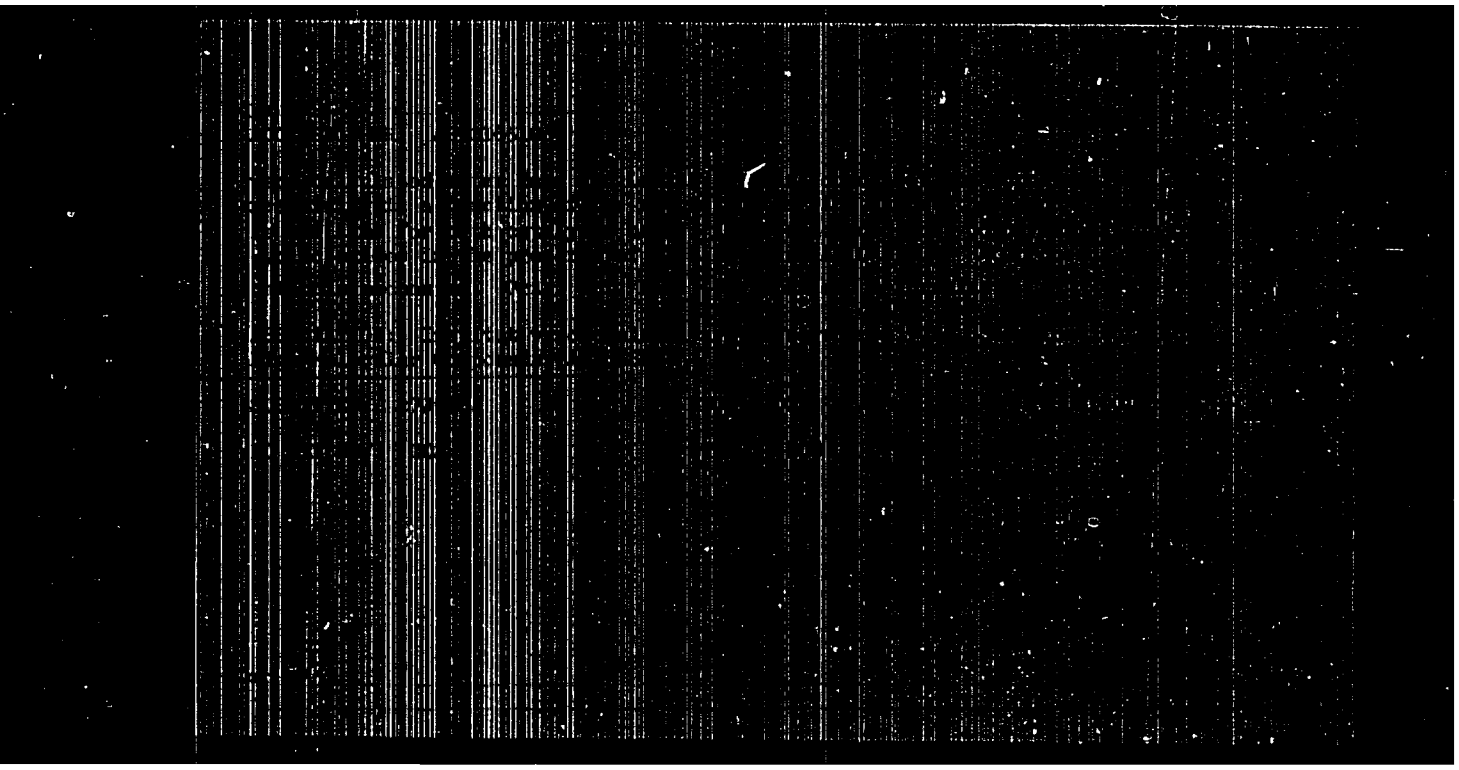
ASSOCIATION: [illegible] AN SSSR (Institute of [illegible] SSSR)

SUBMITTED: [illegible] DATE ACQ: [illegible] ENCL: 00

SUB CODE: CH NO REF SOV: 001 OTHER: 000

Card 2/2





APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000101020017-9"

ACC NR: AP7000336 SOURCE CODE: UR/0413/66/000/022/0094/0094

INVENTOR: Gorin, Yu. A.; Charakaya, K. N.; Rodina, E. I.; Kropachev, V. A.; Alferova, L. K.; Kuren'gina, T. N.

ORG: none

TITLE: Preparative method for elastic tetrahydrofuran copolymers. Class 39, No. 188670 [announced by the All-Union Scientific Research Institute of Synthetic Rubber im. Akademician S. V. Lebedev (Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka); Institute of Macromolecular Compounds AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)]

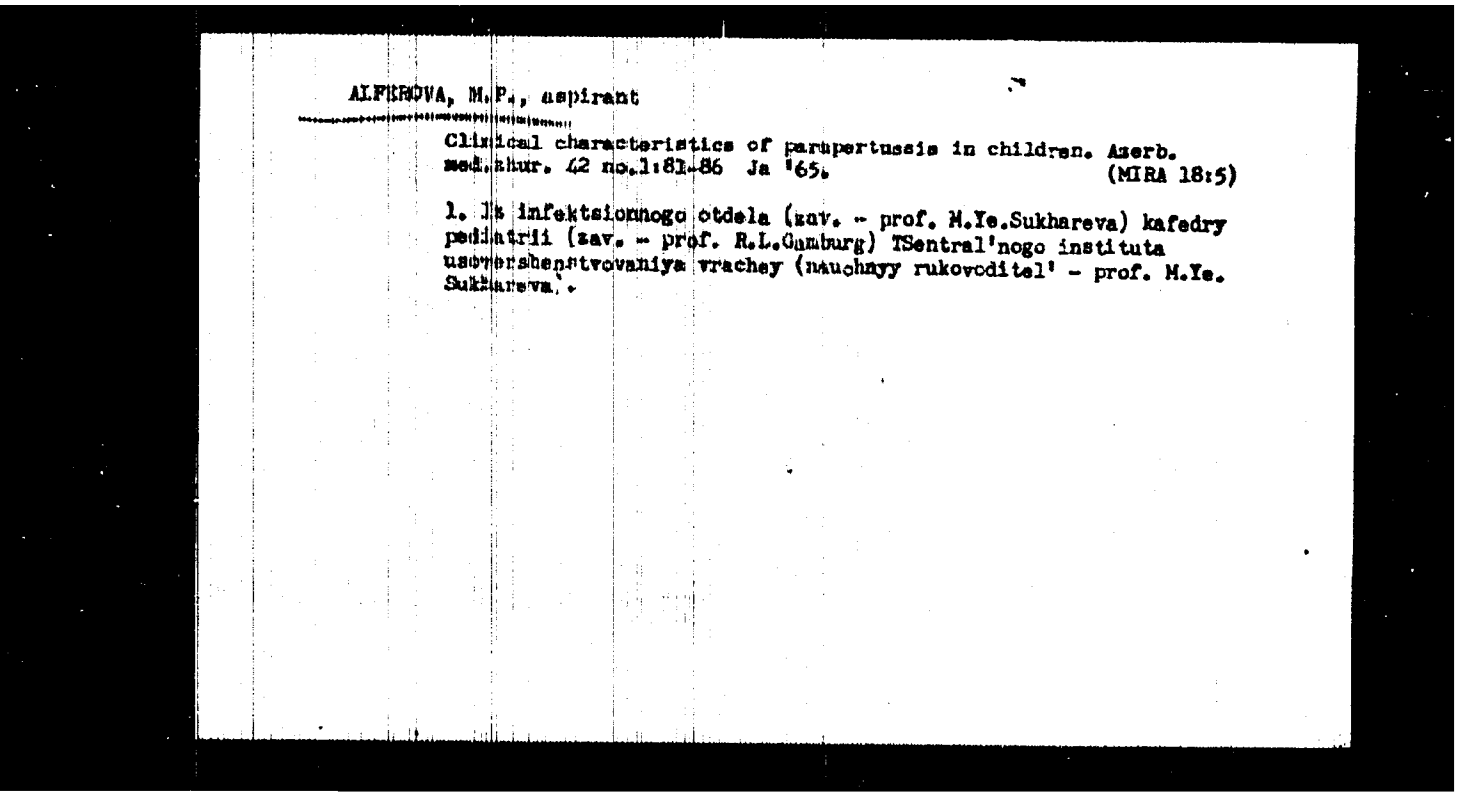
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966, 94

TOPIC TAGS: elastic copolymer, bulk copolymerization, tetrahydrofuran copolymer, ... readily curable copolymer, copolymer, copolymerization

ABSTRACT: An Author Certificate has been issued for a method of preparing elastic copolymers of tetrahydrofuran with oxacyclobutane or organic oxides by bulk copolymerization in the presence of diethyl zinc hydrolyzates or of a system, consisting of aluminumalkyl hydrolyzates and oxacyclobutane derivatives. To produce vulcanization, the method provides for the copolymerization of the above-mentioned monomers in the presence of unsaturated epoxy compounds (e.g., alkyl-1-propanol or butadiene epoxide) as the third monomer. 5107

SUB CODE: 11, 07/ SUBM DATE: 03Jul65/ ATD PRESS:

Card 1/1 UDC: 678.83:66. .062.785



ALFEROVA, M.P., aspirant

Clinical characteristics of parapertussis in children. Azerb. med.zhur. 42 no.1:81-86 Ja '65. (MIRA 18:5)

1. Iz infektsionnogo otdela (zav. - prof. M.Ye.Sukhareva) kafedry pediatrii (zav. - prof. R.L.Gamburg) TSentral'nogo instituta usovershenstvovaniya vrachey (nauchnyy rukovoditel' - prof. M.Ye. Sukhareva).

ALF'EROVA, M.F.

Clinical epidemiological observations in parapertussis in children. Trudy TSIU 78:8-13 '65. (MIRA 18:9)

1. Kafedra pediatrii, otdel detskikh infektsiy (zav.-prof. M.Ye. Sukhareva) TSentral'nogo instituta usovershenstvovaniya vrachey.

The Alloys of the Iron-Carbon-Molybdenum System 19

M.M. Svetchnikoff and N. S. Alferova

Svetchnikoff and N. S. Alferova. (Theory and Practice of Metallurgy, Russia, 1936, No. 4, pp. 75-80). (In Russian). On the basis of an analysis of fifty-five alloys containing up to 2·2% of carbon and up to 10% of molybdenum, which were prepared from Armco iron and high-purity molybdenum (99·98%) in a Tammann furnace, the author has constructed the vertical sections of a space diagram for various constant molybdenum contents, namely, 0·25, 0·50, 1·2, 2·5, 5·5 and 10% molybdenum. He has further plotted the projection of the shift of the pearlite point and of the point of maximum solubility of carbon in the γ-phase, as well as a structural diagram on the surface of the concentration triangle based on the data obtained by the study of the tempered alloys. The liquidus and solidus points were determined by a thermal method and the points of change in the solid state by means of a differential dilatometer. In order to determine the solubility curves of carbides, a combination of the

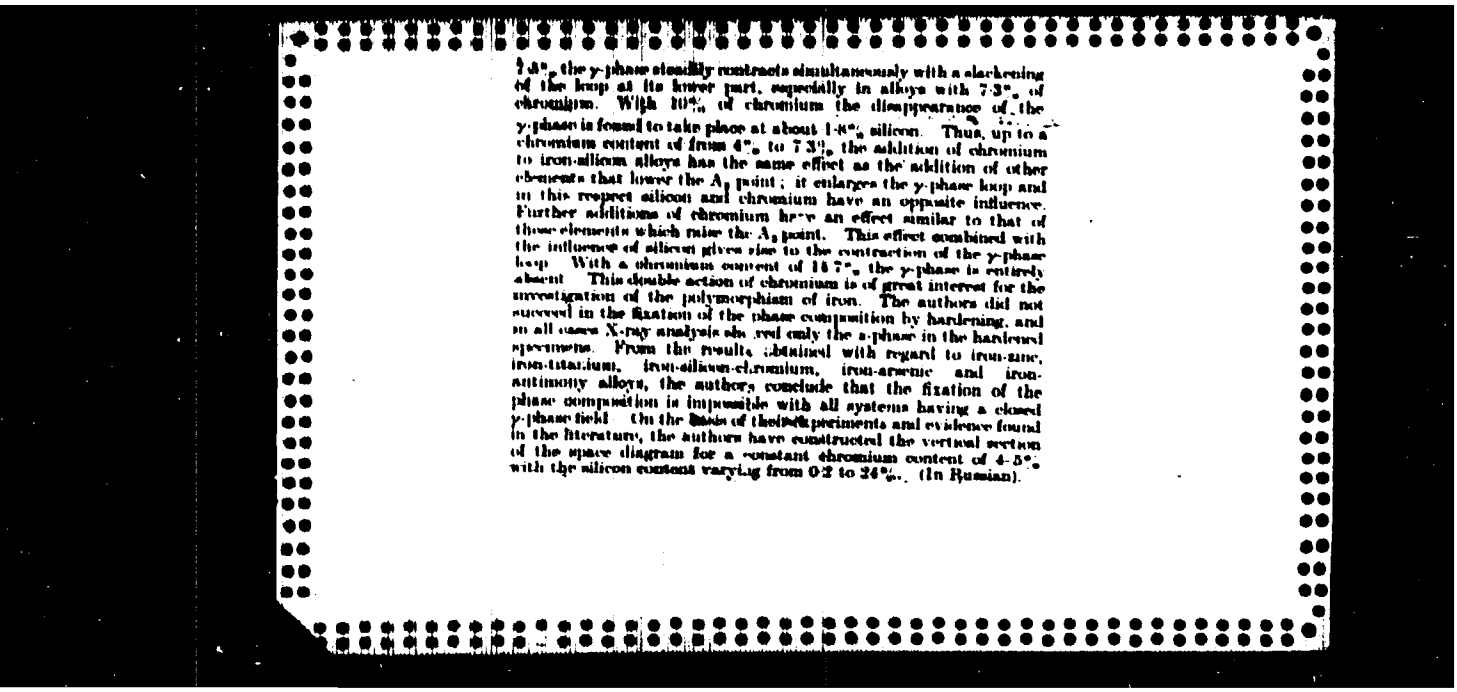
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

dilatometric and hardening methods was employed. For the detection of cementite the Svetchnikoff reagent, a solution of pyrogallic acid in sodium hydroxide, was used. It was found that the pearlite point and the point of maximum solubility of cementite in the γ-phase under the influence of a molybdenum content of up to 1·2% are shifted only slightly in the direction of the lower carbon content. When the molybdenum content is increased still further, there arises a formation of double carbide, and the pearlite and maximum cementite solubility points are abruptly shifted in the direction of the greater carbon contents. When the molybdenum content equals 10%, these points are shifted respectively to 1·32% and 1·83% of carbon. The limit of solubility of the double carbide, which the authors consider to be identical with Arnold and Read's Fe_3Mo_3C, was determined. The change points in the solid state under air-cooling conditions were determined by the dilatometric method; it was found that alloys containing 0·6 to 0·9% of carbon and more than 1·2% of molybdenum, upon being heated up to 1100° C., possessed a self-hardening capacity.

19.

The Alloys of the Iron-Chromium-Silicon System. R. K. Nvetchnikoff and M. B. Alferova. (Theory and Practice of Metallurgy, Russia, 1937, No. 3).—The authors have made and investigated sixty-one alloys containing up to 15% of chromium and up to 4·5% of silicon. Alloys weighing 300 g. each were made in a Tammann vacuum furnace from Armco iron, electrolytic chromium and 79% ferro-silicon. In the majority of cases the carbon content varied within 0·01–0·08%; in thirty alloys it did not exceed 0·05% and reached in exceptional cases 0·11–0·12%. The nitrogen content was found to be 0·0045–0·0084%. The alloys were investigated by thermal and dilatometric methods, microscopic and X-ray examination, and hardness tests of hardened and annealed specimens. The results of the investigation are shown in vertical sections of the space diagram for the following constant contents of chromium: 0·5%; 1%; 2%; 3%; 4%; 7·5%; 10% and 14·5% and in vertical sections for constant contents of silicon: 0·5%; 1%; 1·5%, separately for heating and cooling. After solidification the alloys represent a continuous series of α-solid solutions. The crystallisation range is very narrow. The initial crystallisation temperature is steadily lowered with increasing silicon content. The transformation α(δ) ⇄ γ in the solid state was studied in detail. Up to 4% of chromium the γ-phase loop constantly extends and with 4% of chromium the disappearance of the γ-phase takes place at about 3% silicon. Beginning with a chromium content of

over



1·5%, the γ-phase steadily contracts simultaneously with a slackening of the loop at its lower part, especially in alloys with 7·3% of chromium. With 10% of chromium the disappearance of the γ-phase is found to take place at about 1·8% silicon. Thus, up to a chromium content of from 4% to 7·3%, the addition of chromium to iron-silicon alloys has the same effect as the addition of other elements that lower the A_3 point; it enlarges the γ-phase loop and in this respect silicon and chromium have an opposite influence. Further additions of chromium have an effect similar to that of those elements which raise the A_3 point. This effect combined with the influence of silicon gives rise to the contraction of the γ-phase loop. With a chromium content of 13·7%, the γ-phase is entirely absent. This double action of chromium is of great interest for the investigation of the polymorphism of iron. The authors did not succeed in the fixation of the phase composition by hardening, and in all cases X-ray analysis showed only the α-phase in the hardened specimens. From the results obtained with regard to iron-zinc, iron-titanium, iron-silicon-chromium, iron-arsenic and iron-antimony alloys, the authors conclude that the fixation of the phase composition is impossible with all systems having a closed γ-phase field. On the basis of their experiments and evidence found in the literature, the authors have constructed the vertical section of the space diagram for a constant chromium content of 4·5% with the silicon contents varying from 0·2 to 2·6%. (In Russian).

9

Ca

Effect of small additions on the properties of high-chromium heat-resistant steel. V. S. Svechnikov and N. S. Alferova. *Stal* 7, 35-6 (1947).—The effects of Cb, Ti, Ta, V, Mo, W, Co, N, Ni, Be, Se, Te, N + Ni, and N + Ti on arresting the grain growth of a high-Cr (25-30%) steel were studied. The effects of these addns. were studied on cast steel, on steel heated at 900-1300° for 30 min. to 16 hrs., on the mech. properties of this steel and on scaling. Without any addns. this steel (cast) is coarse-grained. Of the alloying elements 0.55% of Ti was most effective in reducing the grain size. Equally effective was 0.21% of Ti taken together with 0.2% of N. Addn. of N 0.25-0.35, Cb 0.5-2.0, and Ta 1-1.5% reduced the grain size but to a considerably lesser degree. At elevated temps. the effectiveness of the alloying elements in arresting grain growth was in decreasing order Cb, Ti, N, Ta, V, and Mo. Of these Cb, Ti, and N effectively prevented grain growth when the steel was heated for up to 16 hrs. at temps. up to 1300°. V and Mo were effective up to 1100°. Ta was effective at 1200-1300° for 0.5-4.0 hrs. but lost its effect when the steel was heated for longer periods. The elements most effective in preventing grain coarsening, Cb, Ti, N, and Ta, did not impair the heat resistance of the steel. The effects of Cb, Ti, Ta, Mo, and V are attributed to their forming stable carbides, while the action of N is attributed to the formation of austenite at high temps. W, Co, Ni, Be, Se, and Te had no effect on grain growth. M. Hosch

METALLURGICAL LITERATURE CLASSIFICATION

ALTSHUL', Ye. S.

Engr., Sci. Research Pipe Institute, -c1948-.

"Production of Tubes from stainless and heat-resistant steel," Stal', No. 1, 1948

CA 9

Effect of columbium and titanium on the properties of stainless heat-resistant steel at high temperatures. N. S. Allerova. *Stal* 8, 911-17 (1948). Ti and Cb lowered the elastic properties of the tested steel. The presence of σ-phase has a similar effect, particularly when Cb was also present. M. Hosch

ALFEROVA, M. S.

PA 19/49T74

USSR/Metals
Steel, Titanium
Columbium

Oct 48

"Action of Niobium and Titanium on the Plastic Properties of Stainless and Heat-Resistant Steels at High Temperatures," M. S. Alferova, Cand Tech Sci, Bol Res Pipe Inst, 6½ pp

"Stal'" No 10

Addition of titanium and especially niobium lowers plastic properties of heat-resisting and stainless steel in hot condition. Presence of α phase in stainless steel (especially with niobium) also lowers plasticity in hot condition. Data obtained enables

19/49T74

USSR/Metals (Contd)

Oct 48

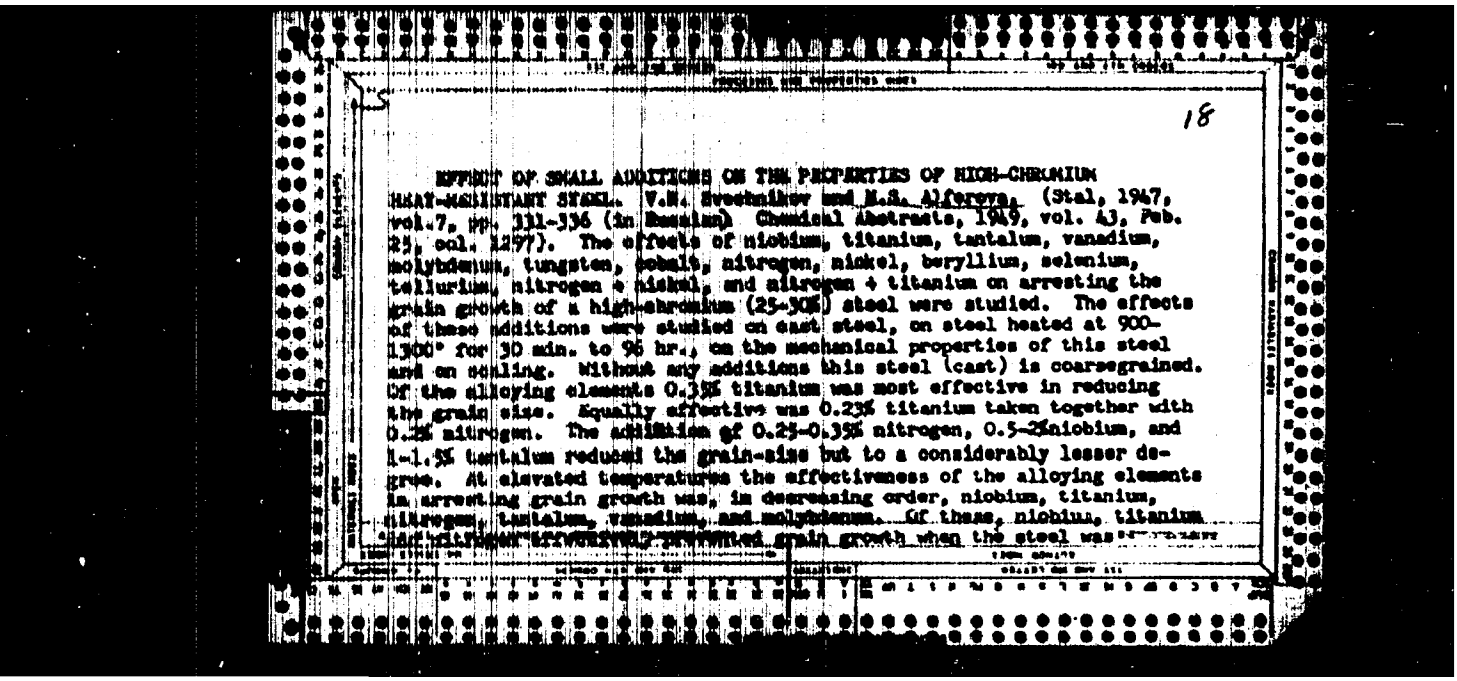
temperature limits for hot-working heat-resisting and stainless steels to be specified. Includes graphs and microphotographs.

19/49T74

SVECHNIKOV, V.N.; ALFEROVA, N.E., kandidat tekhnicheskikh nauk; SOYFER, R.L., inzhener.

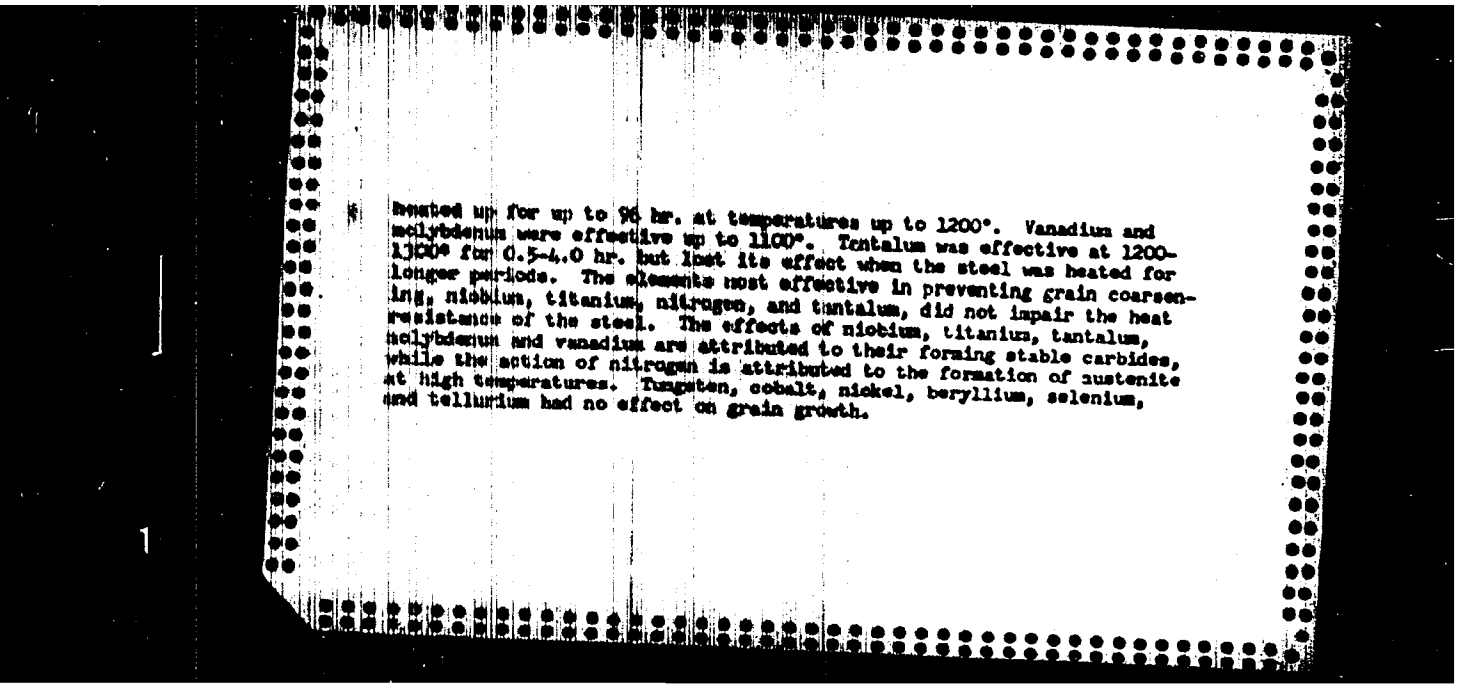
Quality and periodic structure in centrifugal cast steel pipes. Trudy Inst. Chern. met. AN USSR 3:62-76 '49. (MLRA 8:7)

1. Deyatvitel'nyy chlen Akademii nauk USSR. (for Svechnikov)
(Pipe, Steel) (Steel casting--Testing)



18

EFFECT OF SMALL ADDITIONS ON THE PROPERTIES OF HIGH-CHROMIUM HEAT-RESISTANT STEEL. V.N. Svechnikov and N.A. Alferova. (Stal, 1947, vol.7, pp. 331-336 (in Russian) Chemical Abstracts, 1949, vol. 43, Feb. 25, col. 1277). The effects of niobium, titanium, tantalum, vanadium, molybdenum, tungsten, cobalt, nitrogen, nickel, beryllium, selenium, tellurium, nitrogen + nickel, and nitrogen + titanium on arresting the grain growth of a high-chromium (25-30%) steel were studied. The effects of these additions were studied on cast steel, on steel heated at 900-1300° for 30 min. to 96 hr., on the mechanical properties of this steel and on scaling. Without any additions this steel (cast) is coarsegrained. Of the alloying elements 0.3% titanium was most effective in reducing the grain size. Equally effective was 0.2% titanium taken together with 0.2% nitrogen. The addition of 0.25-0.35% nitrogen, 0.5-2% niobium, and 1-1.5% tantalum reduced the grain-size but to a considerably lesser degree. At elevated temperatures the effectiveness of the alloying elements in arresting grain growth was, in decreasing order, niobium, titanium, nitrogen, tantalum, vanadium, and molybdenum. Of these, niobium, titanium [illegible] prevented grain growth when the steel was [illegible]



heated up for up to 96 hr. at temperatures up to 1200°. Vanadium and molybdenum were effective up to 1100°. Tantalum was effective at 1200-1300° for 0.5-4.0 hr. but lost its effect when the steel was heated for longer periods. The elements most effective in preventing grain coarsening, niobium, titanium, nitrogen, and tantalum, did not impair the heat resistance of the steel. The effects of niobium, titanium, tantalum, molybdenum and vanadium are attributed to their forming stable carbides, while the action of nitrogen is attributed to the formation of austenite at high temperatures. Tungsten, cobalt, nickel, beryllium, selenium, and tellurium had no effect on grain growth.

ALEKROVA, N.S., kand.tekhn.nauk; GUTNIKOVA, R.B., inzh.

Properties of scale-resistant Kh25IU5 steel as applied to the manufacture of pipes. Obr.met.davl. no.3:132-147 '54.
(MIRA 12:10)

1. Nauchno-issledovatel'skiy trubnyy institut.
(Steel, Stainless) (Pipe, Steel)

ALFEROVA, N.S.

ALFEROVA, N.S. "Mechnical-Thermal Working of Stainless and Refractory Steels." Acad Sci USSR. Inst of Metallurgy imeni A.A. Baykov. Moscow, 1955. (Dissertation for The Degree of Doctor in Technical Science)

So: Knizhnaya Letopis', No. 15, 1956

ALFEROVA N.S.

123-1-842-D

Translation from: Referativnyy Zhurnal Mashinostroyeniye, 1957, Nr 1, p. 127 (USSR)

AUTHOR: Alferova, N. S.

TITLE: Mechanical and Heat-treatment Processing of Stainless and Heat-resisting Steels (Mekhaniko-termicheskaya obrabotka nerzhaveyushchikh i zharoupornykh staley)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Doctor of Technical Sciences, presented to the Metallurgical Institute, AN SSSR, (In-t metallurgii AN SSSR), 1955

ASSOCIATION: Metallurgical Institute, Academy of Sciences, USSR (In-t Metallurgii, AN SSSR)

Card 1/1

137-58-6-13454

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 330 (USSR)

AUTHORS: Alferova, N. S., Konovalov, V. P.

TITLE: Brittle-fracture Tendencies in Pipes Made of Kh25T Steel as a Function of the Processing Methods (Sklonnost' trub iz stali Kh25T k khrupkomu razrusheniyu v zavisimosti ot usloviy obrabotki)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. trubnyy in-t, 1957, Nr 3, pp 92-100

ABSTRACT: The effect of rolling and heat-treatment operations on brittle fracture tendencies in pipes made of heat-resistant ferrite Kh25T steel was investigated. Impact tests and static and dynamic tensile tests were performed at temperatures ranging from 20 to 200°C on pipe specimens which were tempered at temperatures of 500-1100° after having been rolled, at increased and reduced temperatures, on two machines, namely, a continuous and an automatic one. It was established that maximum critical brittleness temperatures, T_{br}, appear in the absence of heat-treatment procedures and after quenching at low (500°) or at high (1100°) temperatures. Minimum values

Card 1/2

Brittle-fracture Tendencies in Pipes (cont.)

of T_{br} correspond to tempering temperatures ranging from 700 to 850°. The higher the temperature of rolling, the lower is the tempering temperature at which the T_{br} begins to increase. Pipes produced on the automatic rolling mill exhibit a higher T_{br}. It is noted that the increase in T_{br} occurring at increased tempering temperatures is connected with the growth of ferrite grains; however, the T_{br} is also affected by other factors, e.g., the rate of cooling. Slow cooling increases the T_{br}, provided the grains are of uniform size. Unlike impact testing, the tensile tests are not suitable for accurate determination of the T_{br}. On the strength of the results obtained, it is recommended that hot rolling be carried out at reduced temperatures and that the subsequent thermal processing be performed in conjunction with rapid cooling.

1. Steel pipes--Production 2. Heat resistant steel--Heat treatment P. V.
3. Heat resistant steel--Mechanical properties 4. Heat resistant steel--Test results 5. Rolling mills--Metallurgical effects

Card 2/2

Alferova, N.S.

133-1-16/24

AUTHORS: Alferova, N.S., Pishchikov, G.P., and Konovalov, V.P.

TITLE: Production of Hot Rolled Tubes from Steel ЭИ595 and Their Properties (Proizvodstvo goryachekatanykh trub iz stali EI 595 i ikh svoystva)

PERIODICAL: Stal', 1958, No.1, pp. 60 - 66 (USSR)

ABSTRACT: An investigation of the suitability of heat-resistant steel ЭИ595 for hot rolling of tubes is described. Specimens of metal cut out from tube semis (Fig.3) were tested under laboratory conditions, for deformability and piercing ability in a wide range of temperatures at various degrees of reduction. The results obtained were compared with those for other heat-resistant steels: Х25Т, Х25Н5, carbon steel 10 and stainless steel 1Х18Н9Т (Figs. 1, 2 and 4). As steel ЭИ595 is brittle in the cold state, the influence of heat treatment on this property was investigated. The results of tests for impact strength of specimens hardened and slow-cooled from 950 °C are shown in Fig.5, together with the values for impact strength after hardening from 750, 850, 900 and 1 000 °C. It was found that to prevent temper brittleness, it is necessary to apply rapid cooling of tubes in water from 950 - 1 000 °C. Experimental hot rolling of tubes was done on a laboratory mill from specimens of 35 mm diameter and 120 mm long, cut out from

Card1/3

Production of Hot Rolled Tubes from Steel ЭИ595 and Their Properties

works' semis of 90 mm diameter. Piercing was done at 1 200 °C and hot rolling under two practices: 1) piercing with subsequent rolling from single heating, and 2) reheating after piercing to 1 200 °C. The micro-structure of experimental tubes rolled by the above two methods before and after hardening from various temperatures is shown in Figs. 6 and 7, respectively, and mechanical properties in Table 1. Cold rolling of tubes made according to Method 1 after thermal treatment according to the method described in Ref.4 was also tested with good results. Experimental rolling of tubes on an industrial scale was done on the works imeni Lenin. The temperature of semis before piercing was 1 160 - 1 180 °C, after piercing 1 120 - 1 130 °C. Rolling of tubes 57 x 5 mm was done on a continuous mill in rolls with round passes on a long mandrel 48 mm diameter. At the end of rolling, the temperature was 930 - 970 °C. Rolling was normal, the coefficient of consumption of metal for finished hot-rolled tubes before and after heat treatment (hardening from 950 after 1 hour soaking) are given in Table 2 and Figs. 8 and 9. The following personnel of the Plant imeni Lenin participated in the work: I.N. Gulyayev, N.M. Kolpovskiy, A.M. Ludenskiy, N.M. Bukhman, K.F. Beskorvnyy and P.P. Bezrukavyy. There are 2 tables,

133-1-16/24

Production of Hot Rolled Tubes from Steel ЭИ 595 and Their Properties

9 figures and 4 Russian references.

ASSOCIATION: All-Union Scientific Research Tube Institute (Vsesoyuznyy n.-i. trubnyy institut)

AVAILABLE: Library of Congress

Card 3/3

ALFEROVA, N.S.; KONOVALOV, V.P.

Using the penetration-fracture test of beveled specimens for determining optimum deformation temperatures. Biul. TSNIICHM no.5:49-50 '58. (MIRA 11:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy trubnyy institut.
(Steel—Testing)

AUTHORS: Rudoy, V.S., Alferova, N.S., Konovalov, V.P., Nesterova, N.N., Korobochkin, I.Yu, Kirvalidze, N.S., Dergach, A.Ya. and Yakimenko, N.S. SOV/133-59-1-15/23

TITLE: The Technology of Production of Seamless Tubes from High-alloy Steels Alloyed with Boron (Tekhnologiya proizvodstva besshovnykh trub iz vysokolegirovannykh staley s borom)

PERIODICAL: Stal', 1959, Nr 1, pp 68 - 73 (USSR)

ABSTRACT: Efforts made in 1956 to produce seamless tubes from high-alloy steels containing boron EI769 and EI770 gave negative results but in 1957 after some changes in the technology of smelting the metal, satisfactory results were obtained although there were no substantial changes in the chemical composition of the metal (%, numerator - data for 1957, denominator - for 1956):

	C	Si	Mn	Cr	Ni	W	Ti	B
EI769(Kh13N16TR)	0.08 / 0.07	0.55 / 0.64	1.65 / 1.73	13.7 / 13.7	15.7 / 14.9	- / -	0.81 / 0.90	0.009 / 0.0037
EI770(Kh13N18V2TR)	0.08 / 0.08	0.51 / 0.56	1.58 / 1.90	13.2 / 14.2	19.7 / 19.4	2.34 / 2.10	0.81 / 0.69	0.0023 / 0.0026

Card1/5

The Technology of Production of Seamless Tubes from High-alloy Steels Alloyed with Boron

The main characteristics of the technology of smelting metal in 1956 and 1957 differed as follows: a) in 1956, smelting was carried out in a 20-ton arc furnace from a charge containing 40-47% of stainless scrap (the remaining-soft iron and fresh ferroalloys); oxygen was used during melting and oxidising period (500 - 700 m^3 per heat); slag and metal were deoxidised before the addition of ferro-chromium and with the addition of ferrotitanium onto the metal freed from slag 15-20 min before tapping; b) in 1957 smelting was carried out in a 4.5-ton arc furnace from a fresh charge containing from 55 to 78% armco iron and corresponding ferroalloys without utilisation of scrap and oxygen; refining under a white slag with the addition of ferrotitanium after the removal of slag 8-10 min before tapping. In both cases the metal was cast in 500-kg ingots. The quality of tube billets 85 mm in diameter in 1957 was higher than in 1956. The microstructure of metal in both cases consisted of austenite with fine intermetallic inclusions, stretched in the form of lines along the direction of rolling. Piercing ability of the steels was tested on conical specimens (Ref 3). The determination of